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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/036,507

DATE: 04/11/2002  
TIME: 12:58:32

Input Set : A:\SEQ LISTING.txt  
Output Set: N:\CRF3\04112002\J036507.raw

3 <110> APPLICANT: BRUNHAM, ROBERT C  
5 <120> TITLE OF INVENTION: DNA IMMUNIZATION AGAINST CHLAMYDIA INFECTION  
7 <130> FILE REFERENCE: 1038-1210 MIS:jb  
9 <140> CURRENT APPLICATION NUMBER: 10/036,507  
10 <141> CURRENT FILING DATE: 2002-01-07  
12 <150> PRIOR APPLICATION NUMBER: 09/055,765  
13 <151> PRIOR FILING DATE: 1998-04-07  
15 <150> PRIOR APPLICATION NUMBER: 08/893,381  
16 <151> PRIOR FILING DATE: 1997-07-11  
18 <160> NUMBER OF SEQ ID NOS: 17  
20 <170> SOFTWARE: PatentIn Ver. 2.1  
22 <210> SEQ ID NO: 1  
23 <211> LENGTH: 393  
24 <212> TYPE: PRT  
25 <213> ORGANISM: Chlamydia trachomatis  
27 <400> SEQUENCE: 1  
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31 Ala Ser Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ala Glu Pro Ser  
32 20 25 30  
34 Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Gly Asp Pro Cys  
35 35 40 45  
37 Asp Pro Cys Thr Thr Trp Cys Asp Ala Ile Ser Met Arg Met Gly Tyr  
38 50 55 60  
40 Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Lys Thr Asp Val Asn Lys  
41 65 70 75 80  
43 Glu Phe Gln Met Gly Asp Lys Pro Thr Ser Thr Thr Gly Asn Ala Thr  
44 85 90 95  
46 Ala Pro Thr Thr Leu Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His  
47 100 105 110  
49 Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Cys Met Ala Leu Asn  
50 115 120 125  
52 Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Ser Gly  
53 130 135 140  
55 Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly  
56 145 150 155 160  
58 Asp Asn Glu Asn Gln Ser Thr Val Lys Thr Asn Ser Val Pro Asn Met  
59 165 170 175  
61 Ser Leu Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Ala Phe Ser  
62 180 185 190  
64 Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala Thr  
65 195 200 205  
67 Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu

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68	210	215	220
70	Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro Lys		
71	225	230	235
73	Gly Tyr Val Gly Gln Glu Phe Pro Leu Ala Leu Ile Ala Gly Thr Asp		240
74	245	250	255
76	Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr Asn Glu Trp Gln		
77	260	265	270
79	Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr Ile		
80	275	280	285
82	Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg Ile		
83	290	295	300
85	Ala Gln Pro Lys Ser Ala Thr Ala Ile Phe Asp Thr Thr Thr Leu Asn		
86	305	310	315
88	Pro Thr Ile Ala Gly Ala Gly Asp Val Lys Ala Ser Ala Glu Gly Gln		320
89	325	330	335
91	Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met Lys		
92	340	345	350
94	Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp Ala		
95	355	360	365
97	Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg Ala		
98	370	375	380
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106	<212> TYPE: PRT		
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114	20	25	30
116	Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Gly Asp Pro Cys		
117	35	40	45
119	Asp Pro Cys Thr Thr Trp Cys Asp Ala Ile Ser Met Arg Met Gly Tyr		
120	50	55	60
122	Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Lys Thr Asp Val Asn Lys		
123	65	70	75
			80
125	Glu Phe Gln Met Gly Ala Lys Pro Thr Thr Thr Gly Asn Ala Val		
126	85	90	95
128	Ala Pro Ser Thr Leu Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His		
129	100	105	110
131	Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Cys Met Ala Leu Asn		
132	115	120	125
134	Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Ser Ser Gly		
135	130	135	140
137	Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly		
138	145	150	155
			160
140	Asn Asn Glu Asn Gln Thr Lys Val Ser Asn Gly Ala Phe Val Pro Asn		

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141	165	170	175
143	Met Ser Leu Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Ala Phe		
144	180	185	190
146	Ala Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala		
147	195	200	205
149	Thr Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu		
150	210	215	220
152	Glu Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro		
153	225	230	235
155	Lys Gly Tyr Val Gly Lys Glu Leu Pro Leu Asp Leu Thr Ala Gly Thr		
156	245	250	255
158	Asp Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr Asn Glu Trp		
159	260	265	270
161	Gln Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr		
162	275	280	285
164	Ile Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg		
165	290	295	300
167	Ile Ala Gln Pro Lys Ser Ala Glu Thr Ile Phe Asp Val Thr Thr Leu		
168	305	310	315
170	Asn Pro Thr Ile Ala Gly Ala Gly Asp Val Lys Thr Ser Ala Glu Gly		
171	325	330	335
173	Gln Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met		
174	340	345	350
176	Lys Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp		
177	355	360	365
179	Ala Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg		
180	370	375	380
182	Ala Ala His Val Asn Ala Gln Phe Arg Phe		
183	385	390	
186	<210> SEQ ID NO: 3		
187	<211> LENGTH: 393		
188	<212> TYPE: PRT		
189	<213> ORGANISM: Chlamydia trachomatis		
191	<400> SEQUENCE: 3		
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195	Ala Ser Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ala Glu Pro Ser		
196	20	25	30
198	Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Gly Asp Pro Cys		
199	35	40	45
201	Asp Pro Cys Thr Thr Trp Cys Asp Ala Ile Ser Met Arg Met Gly Tyr		
202	50	55	60
204	Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Gln Thr Asp Val Asn Lys		
205	65	70	75
207	Glu Phe Gln Met Gly Ala Lys Pro Thr Ala Thr Thr Gly Asn Ala Ala		
208	85	90	95
210	Ala Pro Ser Thr Cys Thr Ala Arg Glu Asn Pro Ala Tyr Gly Arg His		
211	100	105	110
213	Met Gln Asp Ala Glu Met Phe Thr Asn Ala Ala Tyr Met Ala Leu Asn		

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Output Set: N:\CRF3\04112002\J036507.raw

214 115 120 125  
 216 Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly Ala Thr Ser Gly  
 217 130 135 140  
 219 Tyr Leu Lys Gly Asn Ser Ala Ser Phe Asn Leu Val Gly Leu Phe Gly  
 220 145 150 155 160  
 222 Asp Asn Glu Asn Gln Ser Thr Val Lys Lys Asp Ala Val Pro Asn Met  
 223 165 170 175  
 225 Ser Phe Asp Gln Ser Val Val Glu Leu Tyr Thr Asp Thr Thr Phe Ala  
 226 180 185 190  
 228 Trp Ser Val Gly Ala Arg Ala Ala Leu Trp Glu Cys Gly Cys Ala Thr  
 229 195 200 205  
 231 Leu Gly Ala Ser Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val Glu Glu  
 232 210 215 220  
 234 Leu Asn Val Leu Cys Asn Ala Ala Glu Phe Thr Ile Asn Lys Pro Lys  
 235 225 230 235 240  
 237 Gly Tyr Val Gly Lys Glu Phe Pro Leu Asp Leu Thr Ala Gly Thr Asp  
 238 245 250 255  
 240 Ala Ala Thr Gly Thr Lys Asp Ala Ser Ile Asp Tyr Asn Glu Trp Gln  
 241 260 265 270  
 243 Ala Ser Leu Ala Leu Ser Tyr Arg Leu Asn Met Phe Thr Pro Tyr Ile  
 244 275 280 285  
 246 Gly Val Lys Trp Ser Arg Ala Ser Phe Asp Ala Asp Thr Ile Arg Ile  
 247 290 295 300  
 249 Ala Gln Pro Lys Leu Ala Thr Ala Ile Phe Asp Thr Thr Thr Leu Asn  
 250 305 310 315 320  
 252 Pro Thr Ile Ala Gly Ala Gly Glu Val Lys Ala Asn Ala Glu Gly Gln  
 253 325 330 335  
 255 Leu Gly Asp Thr Met Gln Ile Val Ser Leu Gln Leu Asn Lys Met Lys  
 256 340 345 350  
 258 Ser Arg Lys Ser Cys Gly Ile Ala Val Gly Thr Thr Ile Val Asp Ala  
 259 355 360 365  
 261 Asp Lys Tyr Ala Val Thr Val Glu Thr Arg Leu Ile Asp Glu Arg Ala  
 262 370 375 380  
 264 Ala His Val Asn Ala Gln Phe Arg Phe  
 265 385 390  
 268 <210> SEQ ID NO: 4  
 269 <211> LENGTH: 393  
 270 <212> TYPE: PRT  
 271 <213> ORGANISM: Chlamydia trachomatis  
 273 <400> SEQUENCE: 4  
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 277 Ala Ser Ser Leu Gln Ala Leu Pro Val Gly Asn Pro Ala Glu Pro Ser  
 278 20 25 30  
 280 Leu Met Ile Asp Gly Ile Leu Trp Glu Gly Phe Gly Asp Pro Cys  
 281 35 40 45  
 283 Asp Pro Cys Thr Thr Trp Cys Asp Ala Ile Ser Met Arg Met Gly Tyr  
 284 50 55 60  
 286 Tyr Gly Asp Phe Val Phe Asp Arg Val Leu Glu Thr Asp Val Asn Lys

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Input Set : A:\SEQ LISTING.txt  
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287	65	70	75	80															
289	Glu	Phe	His	Met	Gly	Ala	Lys	Pro	Thr	Ser	Thr	Thr	Gly	Asn	Ala	Thr			
290																85	90	95	
292	Ala	Pro	Thr	Thr	Leu	Thr	Ala	Arg	Glu	Asn	Pro	Ala	Tyr	Gly	Arg	His			
293																100	105	110	
295	Met	Gln	Asp	Ala	Glu	Met	Phe	Thr	Asn	Ala	Ala	Cys	Met	Ala	Leu	Asn			
296																115	120	125	
298	Ile	Trp	Asp	Arg	Phe	Asp	Val	Phe	Cys	Thr	Leu	Gly	Ala	Thr	Ser	Gly			
299																130	135	140	
301	Tyr	Leu	Lys	Gly	Asn	Ser	Ala	Ser	Phe	Asn	Leu	Val	Gly	Leu	Phe	Gly			
302	145															150	155	160	
304	Asp	Asn	Glu	Asn	Gln	Lys	Thr	Val	Lys	Ala	Glu	Ser	Val	Pro	Asn	Met			
305																165	170	175	
307	Ser	Phe	Asp	Gln	Ser	Val	Val	Glu	Leu	Tyr	Thr	Asp	Thr	Thr	Phe	Ala			
308																180	185	190	
310	Trp	Ser	Val	Gly	Ala	Arg	Ala	Ala	Leu	Trp	Glu	Cys	Gly	Cys	Ala	Thr			
311																195	200	205	
313	Leu	Gly	Ala	Ser	Phe	Gln	Tyr	Ala	Gln	Ser	Lys	Pro	Lys	Val	Glu	Glu			
314																210	215	220	
316	Leu	Asn	Val	Leu	Cys	Asn	Ala	Ala	Glu	Phe	Thr	Ile	Asn	Lys	Pro	Lys			
317	225															230	235	240	
319	Gly	Tyr	Val	Gly	Lys	Glu	Phe	Pro	Leu	Asp	Leu	Thr	Ala	Gly	Thr	Asp			
320																245	250	255	
322	Ala	Ala	Thr	Gly	Thr	Lys	Asp	Ala	Ser	Ile	Asp	Tyr	Asn	Glu	Trp	Gln			
323																260	265	270	
325	Ala	Ser	Leu	Ala	Leu	Ser	Tyr	Arg	Leu	Asn	Met	Phe	Thr	Pro	Tyr	Ile			
326																275	280	285	
328	Gly	Val	Lys	Trp	Ser	Arg	Ala	Ser	Phe	Asp	Ala	Asp	Thr	Ile	Arg	Ile			
329																290	295	300	
331	Ala	Gln	Pro	Lys	Ser	Ala	Thr	Ala	Ile	Phe	Asp	Thr	Thr	Thr	Leu	Asn			
332	305															310	315	320	
334	Pro	Thr	Ile	Ala	Gly	Ala	Gly	Asp	Val	Lys	Thr	Gly	Thr	Glu	Gly	Gln			
335																325	330	335	
337	Leu	Gly	Asp	Thr	Met	Gln	Ile	Val	Ser	Leu	Gln	Leu	Asn	Lys	Met	Lys			
338																340	345	350	
340	Ser	Arg	Lys	Ser	Cys	Gly	Ile	Ala	Val	Gly	Thr	Thr	Ile	Val	Asp	Ala			
341																355	360	365	
343	Asp	Lys	Tyr	Ala	Val	Thr	Val	Glu	Thr	Arg	Leu	Ile	Asp	Glu	Arg	Ala			
344																370	375	380	
346	Ala	His	Val	Asn	Ala	Gln	Phe	Arg	Phe										
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351	<211>	LENGTH:	394																
352	<212>	TYPE:	PRT																
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359	Ala	Ser	Ser	Leu	Gln	Ala	Leu	Pro	Val	Gly	Asn	Pro	Ala	Glu	Pro	Ser			

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/036,507

DATE: 04/11/2002

TIME: 12:58:33

Input Set : A:\SEQ LISTING.txt

Output Set: N:\CRF3\04112002\J036507.raw